

Figure 1

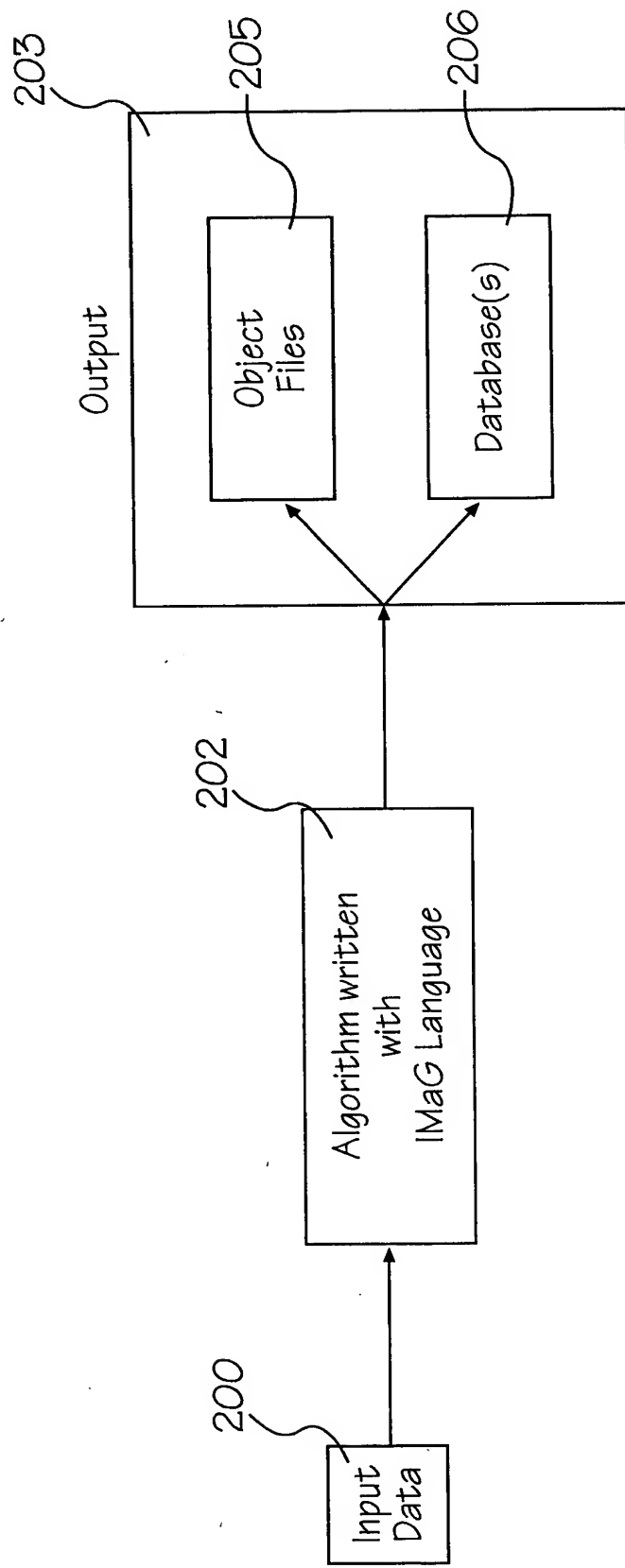


Figure 2

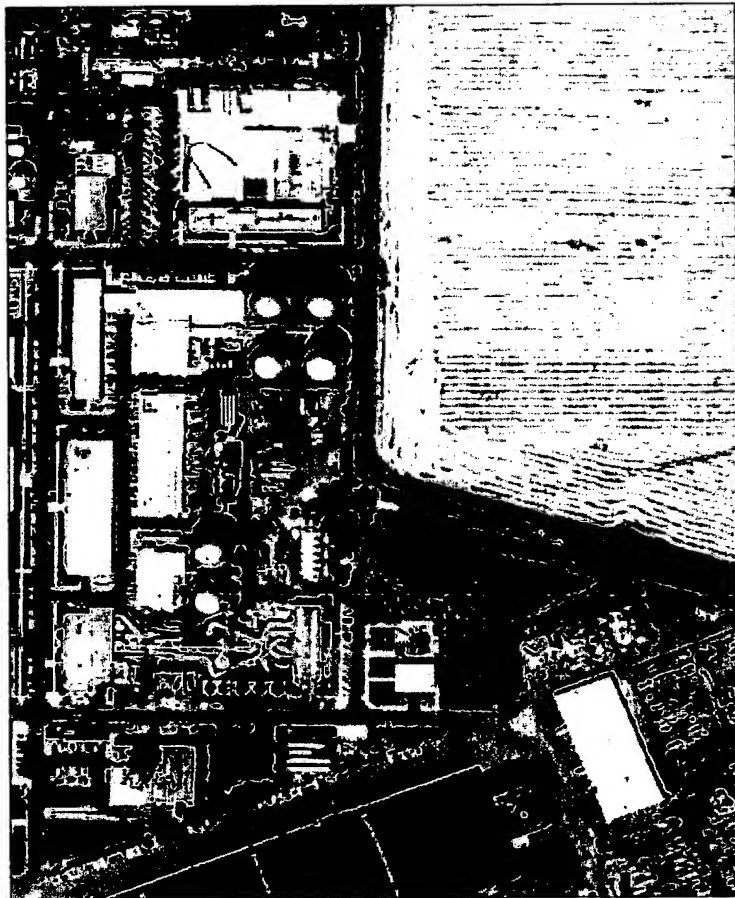


Figure 3

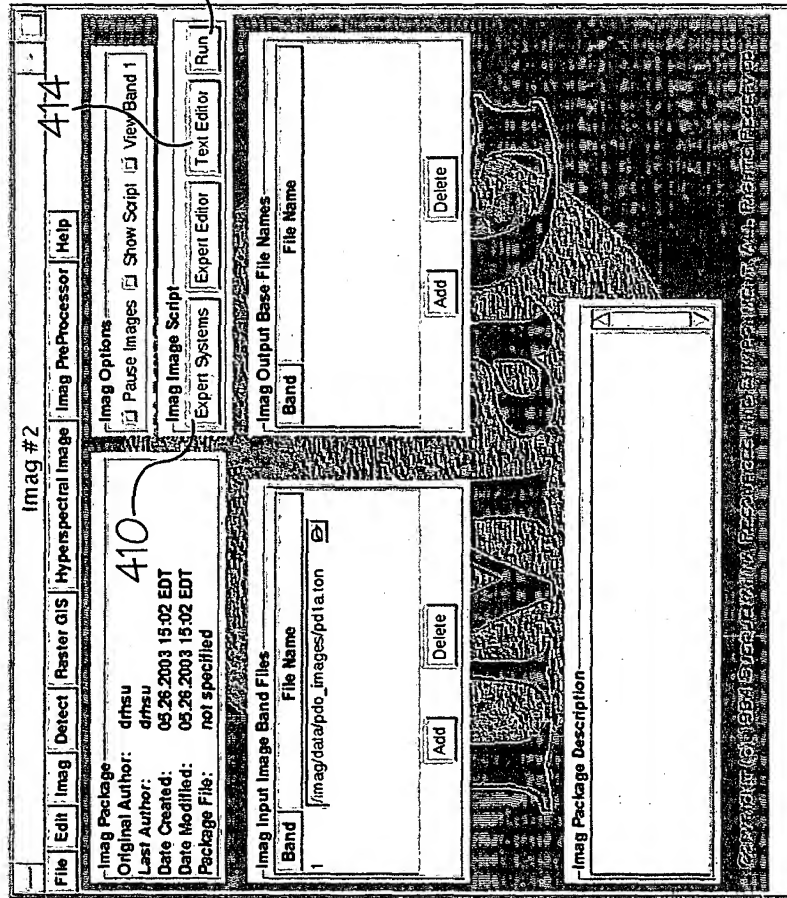


Figure 4

Expert Systems Browser		
Model Type	Brief Description	Object Examples
<input type="checkbox"/> Combined	Extract hybrid pixel/region object using cross band/layer	FLIR 1249MD
<input type="checkbox"/> Linear		
<input type="checkbox"/> Mesotexture		
<input type="checkbox"/> Pixel		
<input type="checkbox"/> Region		
	Bright Or Dark Object Feature Extration	cars buses etc...
	Both Bright & Dark Object Feature Extration	cars buses etc...
	Bright Or Dark Object Feature Extration	cars buses etc...
	Both Bright & Dark Object Feature Extration	cars buses etc...
	New Bright OR Dark Pixel Region Model	ground vehicles
	New Model For Visualization Using Two Input Bands	SAR vehicles (IPP, RAW)

Enter Key Words:

Imag Systems Description
Exerose on Pixel based region and Rectangle based region for either dark or bright objects.

Figure 5

Pixel-Based Region Model

Filter Type

Filter For Band 1:

- > Expand
- > IQ Normalize
- > Low Pass
- > Median
- > None

Object Of Interest

Object of interest name:

Item Name:

Guard distance around object:

Pixels: 2 By Pixels: 3

Object Characteristics

Type of object desired:

- > Bright Object
- > Dark Object

Percent intensity of object: 614

30 40 50 60 70 80 90 100

Minimum percent density required for object: 40

1 12 23 34 45 56 67 78 89 100

Search region size: 618

Pixels: 3 By Pixels: 3

Done Quit Run

Figure 6

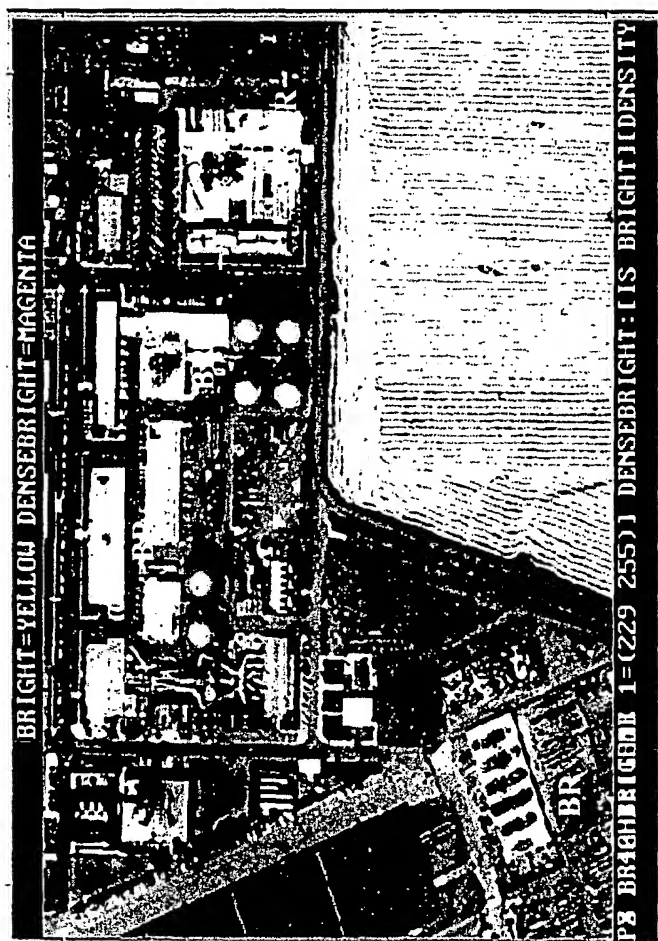


Figure 7

Region Based Model	
Filter Type Filter to perform on band 1: <input checked="" type="checkbox"/> Median <input checked="" type="checkbox"/> Low Pass	Segmentation Type of segmentation: <input checked="" type="checkbox"/> Global Segmentation <input checked="" type="checkbox"/> Local Segmentation
Spatial Aspect Merging of spatially contiguous objects: Size of the FIRST object: Upper Bound: 500 Lower Bound: 1 Size of the SECOND object: Upper Bound: 500 Lower Bound: 1	Nonlinearity Degree of nonlinearity: Upper Bound: 5000 Lower Bound: 0 Please select the size of the nonlinear object: Upper Bound: 50000 Lower Bound: 100
Linearity Degree of linearity: Upper Bound: 10000 Lower Bound: 7000 Size of the linear object: Upper Bound: 50000 Lower Bound: 100	Linearity For Moderate Objects Degree of linearity for moderate objects: Upper Bound: 7000 Lower Bound: 5000 Size of the moderately linear objects: Upper Bound: 50000 Lower Bound: 100
Done	Quit Run

912

Figure 9

1010

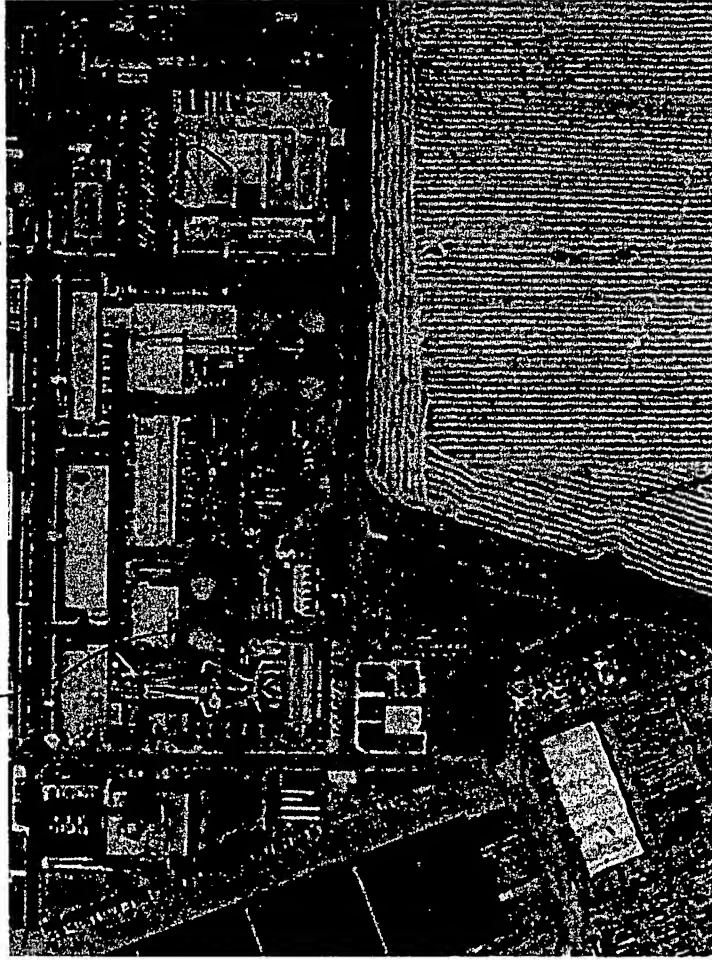


Figure 10

Id	Size	Tone	Row Cent	Col Cent	Row Min	Row Max	Col Min	Col Max	Convo	Elong	Constr	Linear	Aspect	Inclin	Textur	Deviat	Divers	Max Tone	Min Tone	Coord
1	172712	0	179.5	239.2	0	359	0	479	0	0	0	588	9424	0	0	0	0	0	0	(0,0) (359,479)
2	1	179	72.0	304.0	72	72	304	304	0	0	0	0	0	0	0	0	0	179	179	(72,304) (72,304)
3	87	145	97.4	158.7	92	103	154	163	0	0	0	360	10389	97	446	522	1703	153	121	(92,154) (103,163)

10a10

10a12

Figure 10A

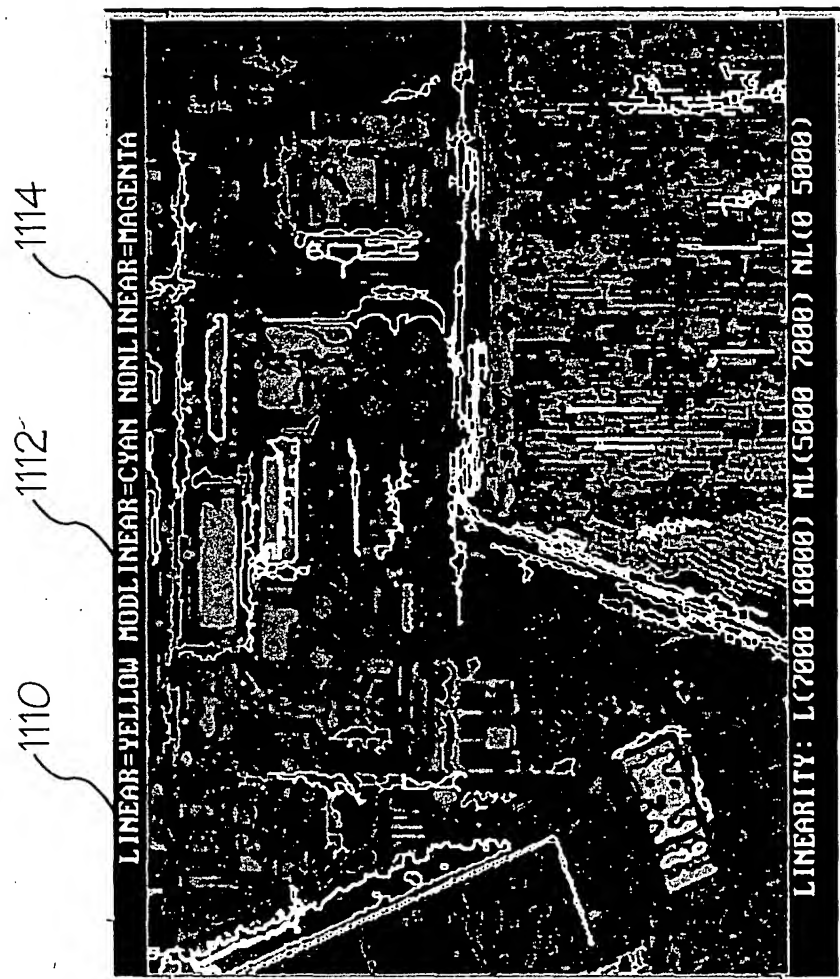


Figure 11

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File Edit Format Options Help
TextEditor - tmp.7068.0

BANDS - 1;
MODIFY 1 = MEDIAN3;
modify 1 - expand;

SHOW RULES = NO;
SHOW SEGMENTATION STATISTICS = NO;
SHOW MERGING STATISTICS = NO;
INITIAL CUTOFF = 5;
SEGMENTATION TYPE = local;
SHOW INITIAL SEGMENTATION = SLOW;
SHOW INITIAL SEGMENTATION = BW 50 65000;
MERGE = 40,1 STOP1 1;

SHOW #1 MERGE - SLOW;
SHOW #1 MERGE = BW 50 65000;
MERGE = 2 SPF = (1 500 1 500 -1000);
SHOW #2 MERGE = SLOW;
SHOW #2 MERGE - BW 50 65000;
SEEK LINEAR MODLINEAR NONLINEAR;
Seek small_dark_region non_linear_bright possible_tank;
REGION LINEAR: [#1 SIZE = (100 50000)] [#1 LINEARITY = (7000 10000)];
REGION MODLINEAR: [#1 SIZE = (100 50000)] [#1 LINEARITY = (5000 7000)];
REGION NONLINEAR: [#1 SIZE = (100 50000)] [#1 LINEARITY = (0 5000)];
/* This is the object we are interested in */
region small_dark_region: [#1 tone = (0 20)] [#1 size = (50 1000)];
region nonlinear_bright: [is nonlinear] [#1 tone = (300 255)];
/* those are new objects defined */
TOP TITLE = "LINEAR=YELLOW MODLINEAR=CYAN NONLINEAR=MAGENTA";
BOTTOM TITLE = "LINEARITY: L(7000 10000) ML(5000 7000) NL(0 1000)";

DISPLAY LINEAR=YELLOW MODLINEAR=CYAN NONLINEAR=MAGENTA;
BW 1 DISPLAY LINEAR=YELLOW MODLINEAR=CYAN NONLINEAR=MAGENTA;
BW 1 DISPLAY NONLINEAR=MAGENTA;
top title = "possible_tank=magenta small_dark=yellow";

bw 1 display nonlinear=magenta small_dark=yellow;
bw 1 display possible_tank=red;

```

Figure 11A

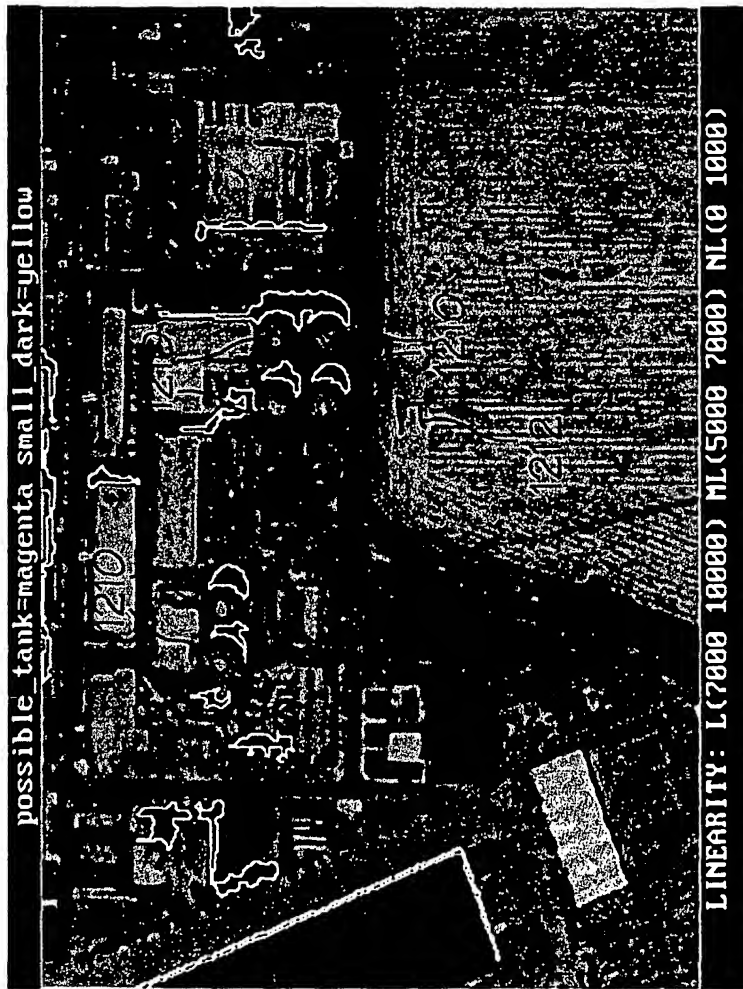


Figure 12



Figure 13

1410 1410
Region Twentythree23: [is Two2][left Three3]
[approaches 30 Three3];
TOP TITLE = "23=yellow Three3=cyan"; 1414
Bottom Title = " " ;
Display Twentthree23=yellow Three3=cyan;
BW 1 Display Twentythree23=yellow Three3=cyan;

Figure 14

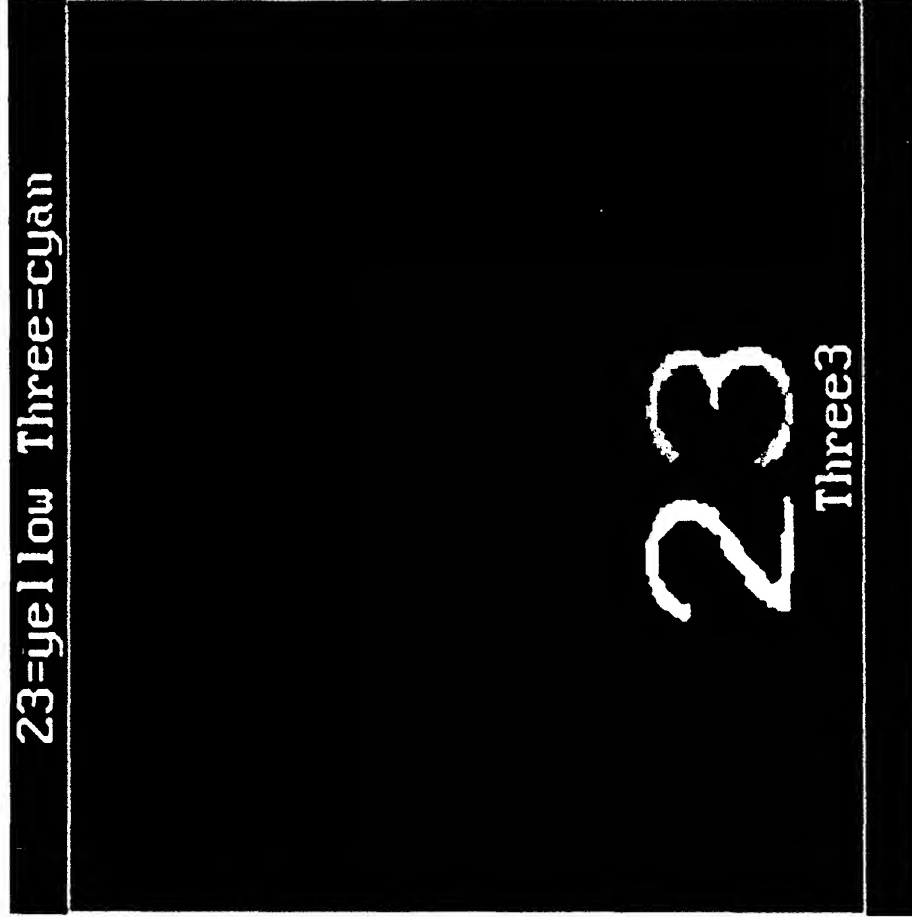


Figure 15

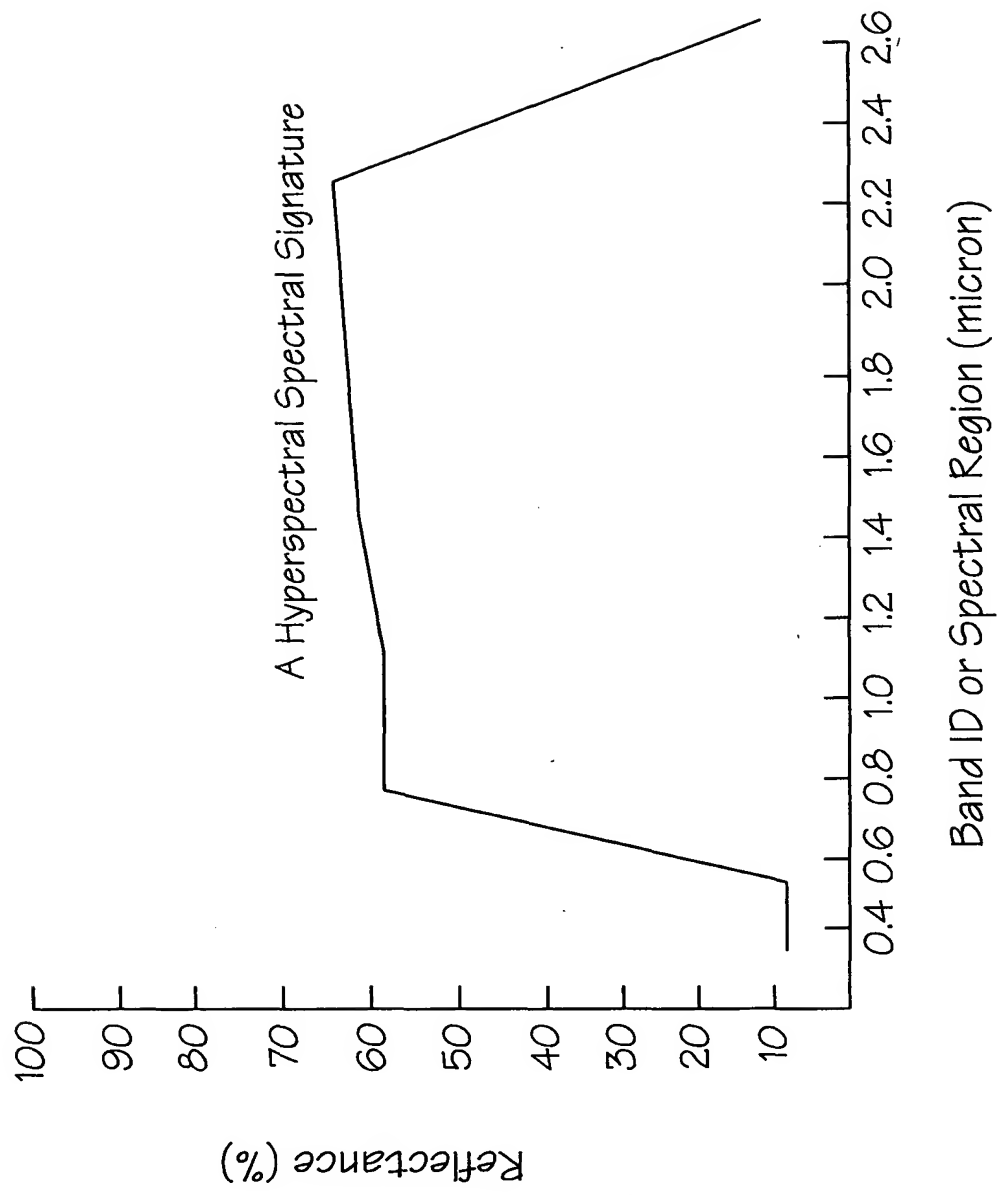


Figure 16

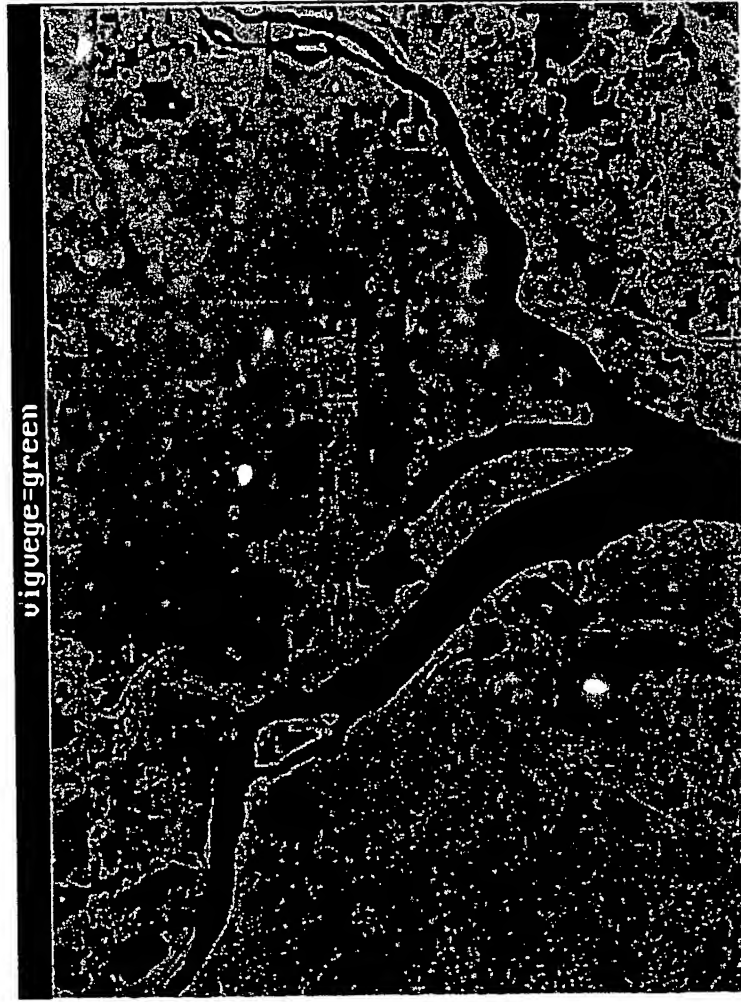


Figure 17

```

/*
*/

/*
*/
BANDS = 9;
/* total number of band 91 with only 7 input bands, 2 additional
Bands are to be generated by IMAg. */

Modify 6 = expand;
/*band 6, thermal is expanded to a full 0=255 range */

BAND 8 = 0.85468 * :4: = 0.05493 * :5: - .24717 * :1: - .6263 * :2:
- .40639 * :3: - .11749 * :7:;
/* a greenness transform formula */

BAND 9 = (:6: > 140) * 250 ;
/* band 9 is defined by using band 6 as the base;
Any pixel with intensity value > 140 is coded as 250 */

```

17a10

17a12

Figure 17A

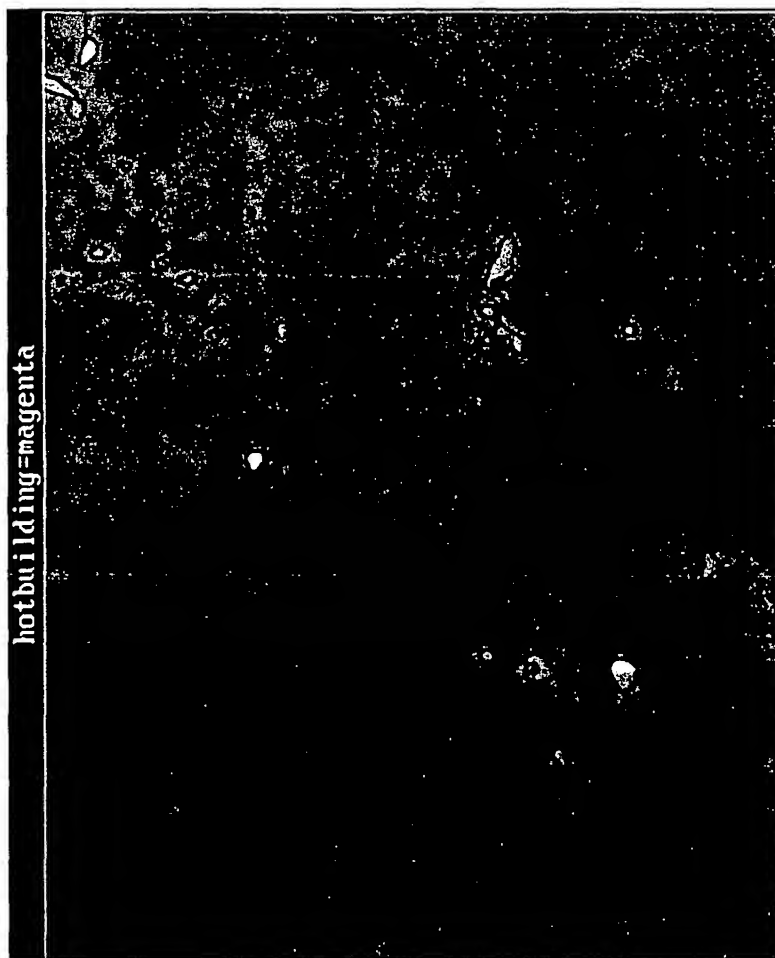


Figure 18

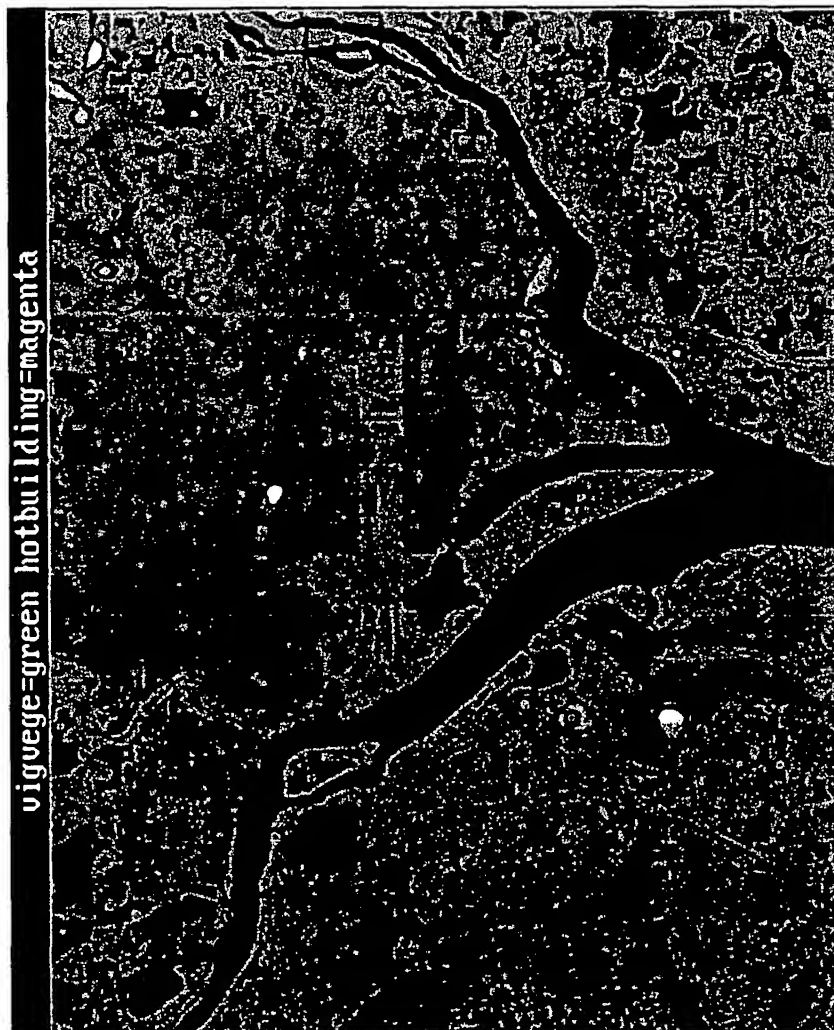


Figure 19

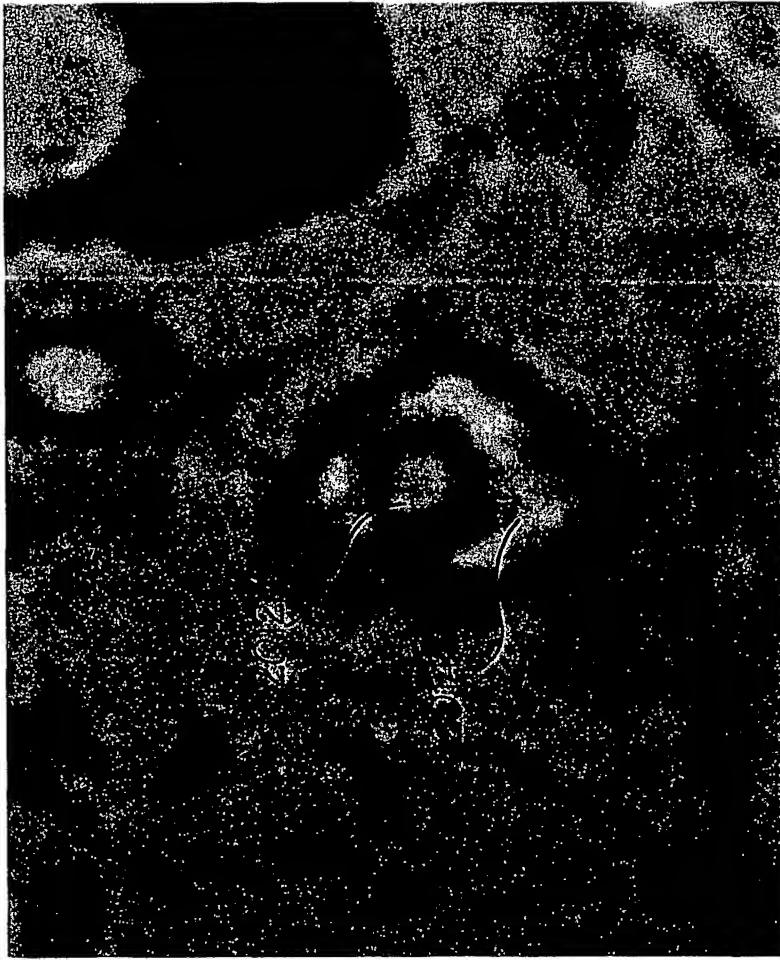


Figure 20

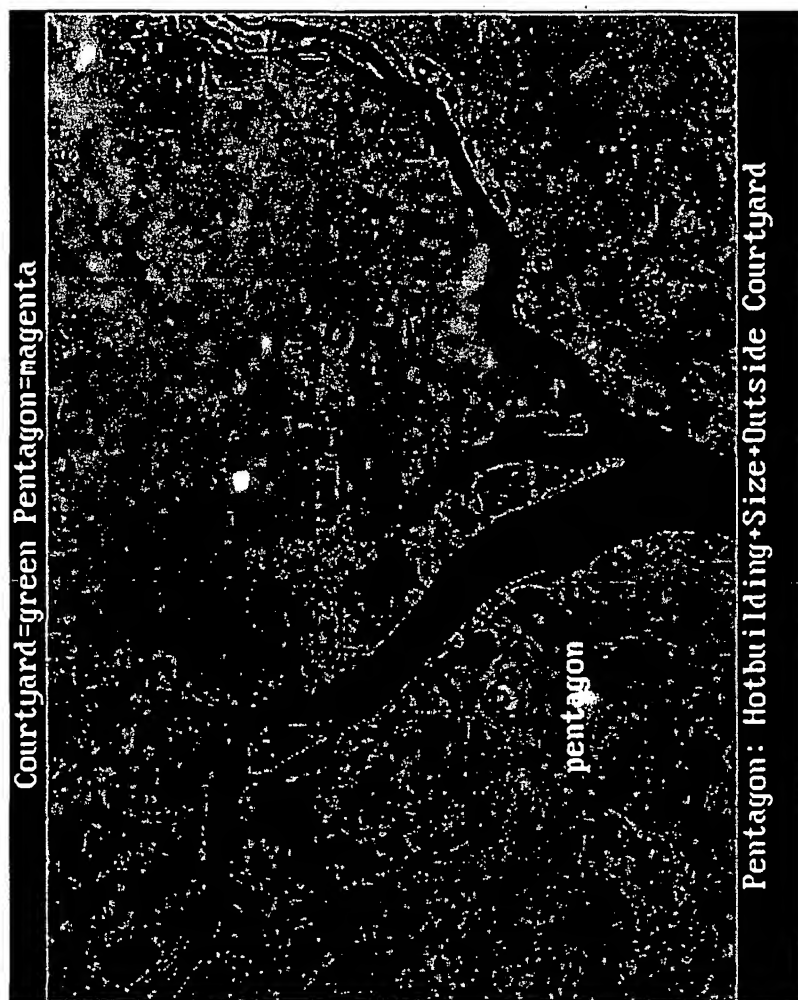


Figure 21

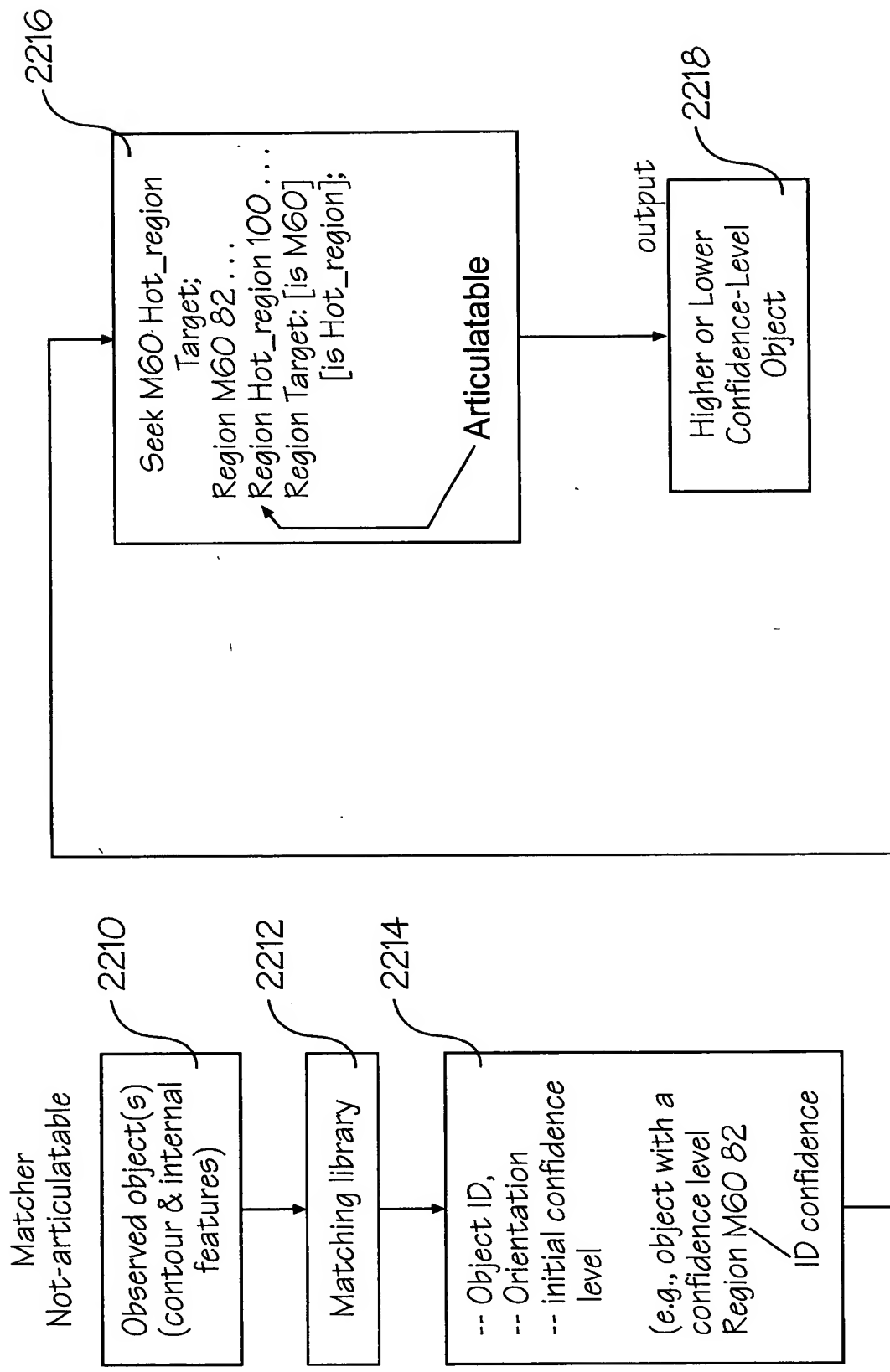


Figure 22

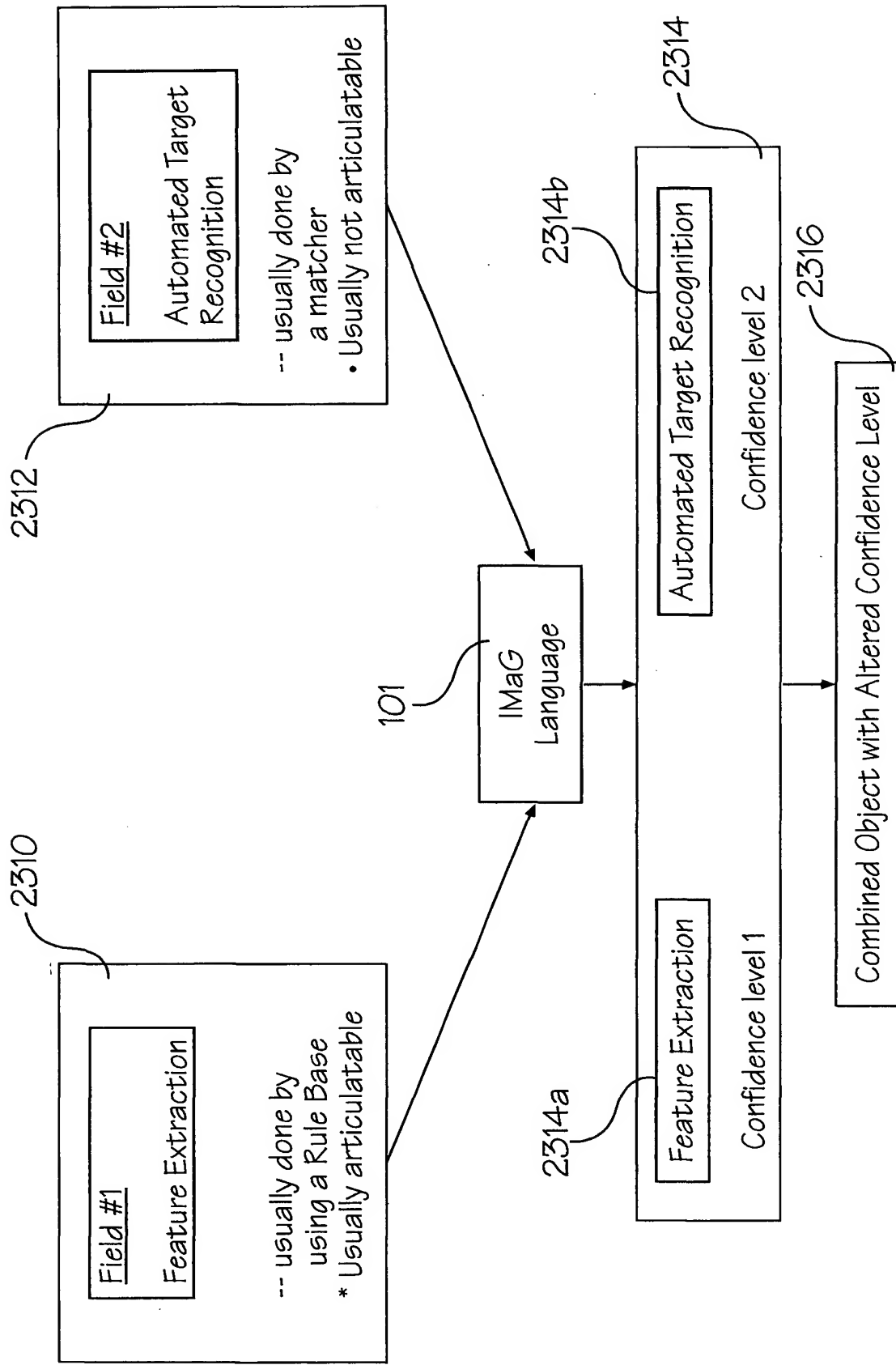


Figure 23

```

2410 Seek Small_round_region Bright_region Sbr2dk;
2414
2410 Region Small_round_region 90:
2414     [#0 size 1 = (40 500)]
2416     [#0 elongation 1 - () 300)];
2414
2410 Region Bright_region 70 : [#0 tone 1 = (120 255)];
2416
2410 Region Sbr2dk: [is Small_reound_region]
2418     [is Bright_region];
2420
2422 Top Title = "display sbr2dk=green, 50 sb22dk=red, 70";
Bw 1 display sbr2dk=green,50 sbr2dk=red,70;

```

Figure 24

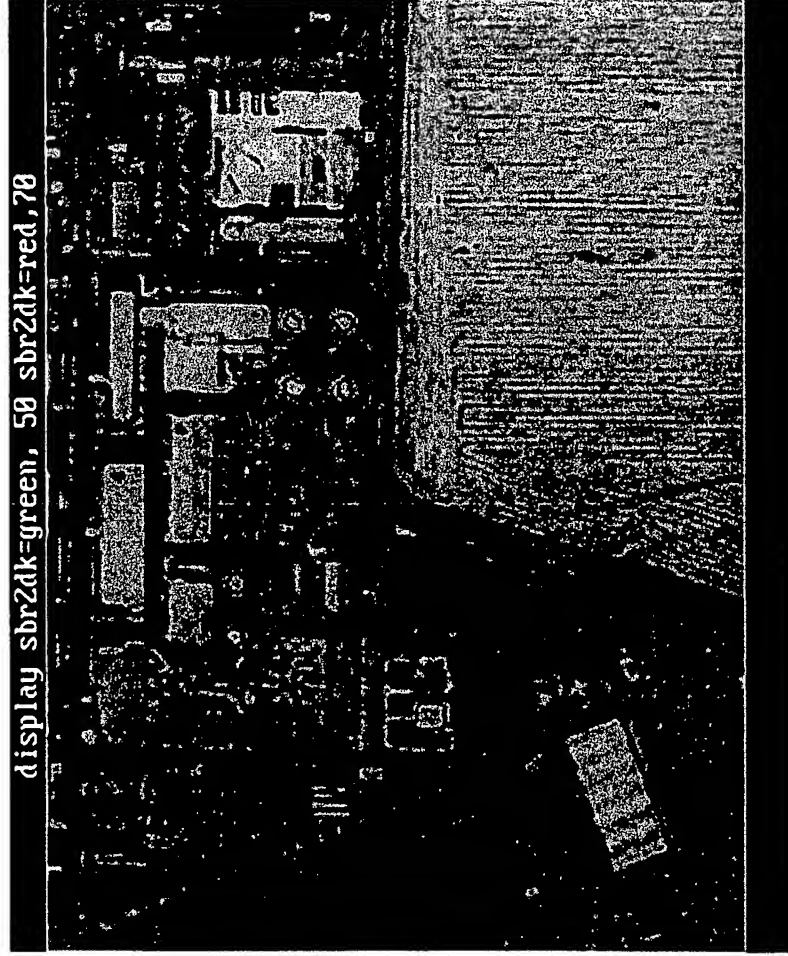


Figure 25

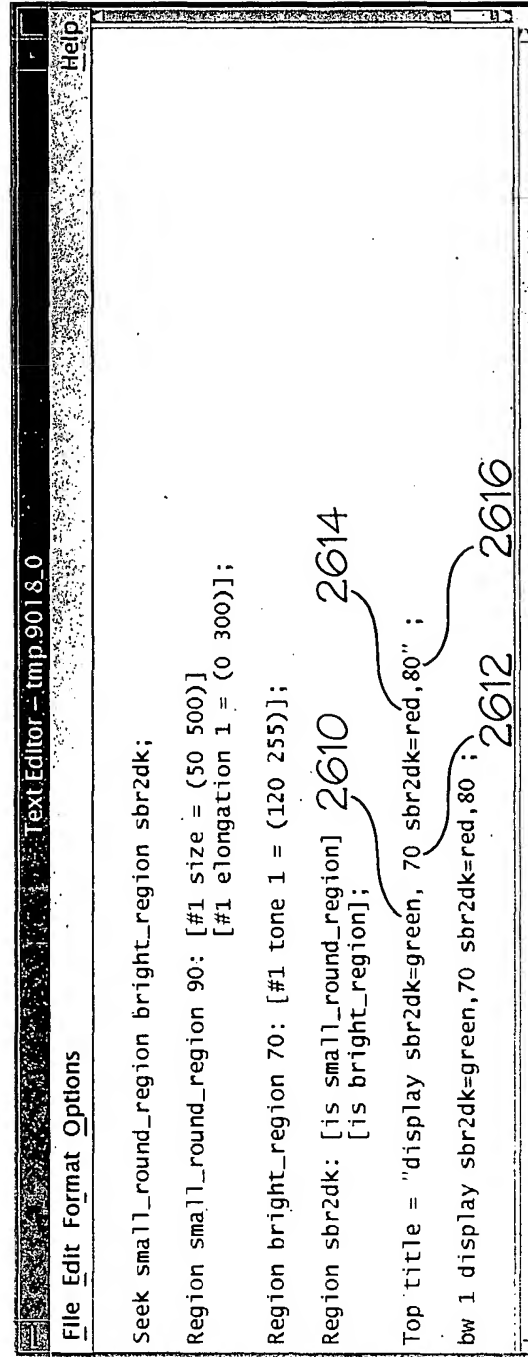


Figure 26

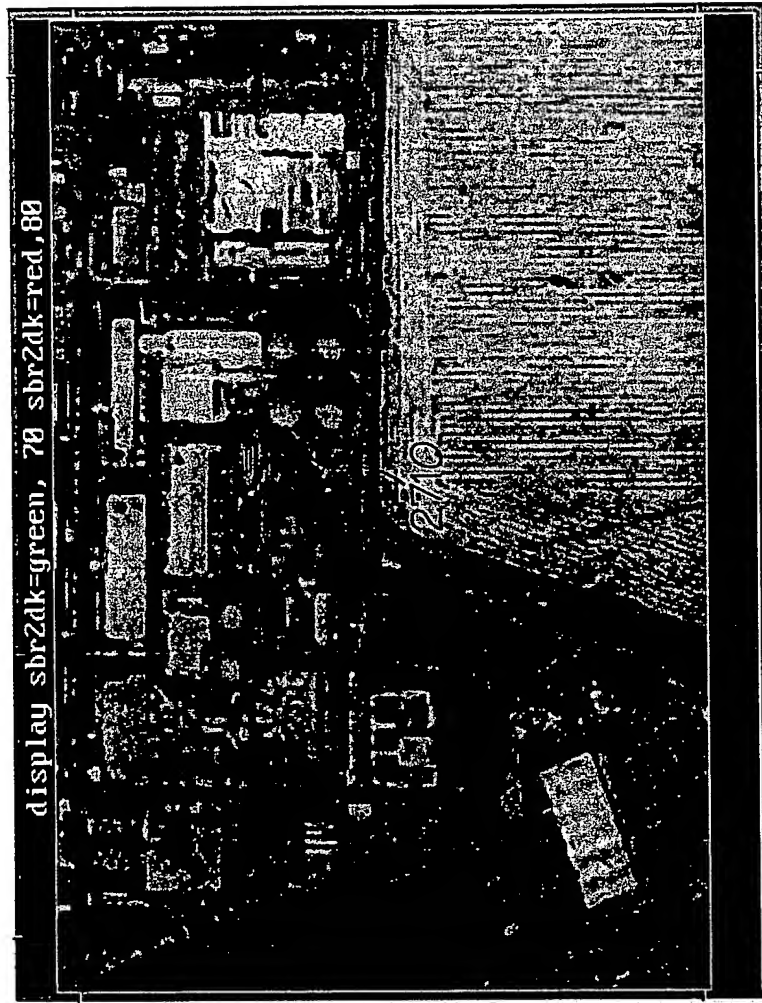


Figure 27